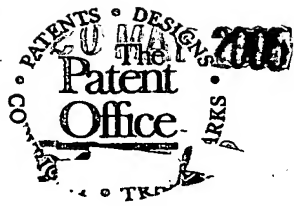




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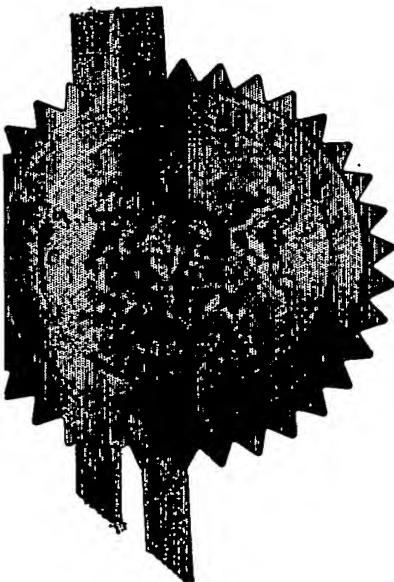
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*P. Mahoney*

Dated

26 November 2003

# Patents Form 1/77

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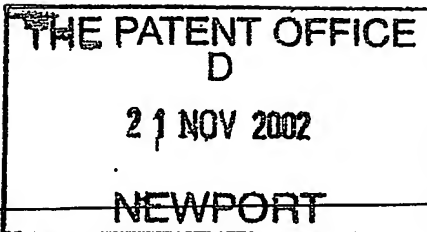


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P01/T700 0.00-0227207.8

1/77

## Request for grant of a patent

(See the notes on the back of this form. You can also get an explanatory leaflet from the Patent Office to help you fill in this form)



The Patent Office

Cardiff Road  
Newport  
South Wales  
NP10 8QQ

1. Your reference

MN02/0021/GB

2. Patent application number

(The Patent Office will fill in this part)

21 NOV 2002

0227207.8

3. Full name, address and postcode of the or of each applicant (underline all surnames)

08511438001

Patents ADP number (if you know it)

Liquid Science Laboratories Ltd  
Unit R Bee Mill  
Ribchester  
Preston  
Lancashire PR3 3XJ

If the applicant is a corporate body, give the country/state of its incorporation

4. Title of the invention

Solvent

5. Name of your agent (if you have one)

"Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode)

David L McNeight  
Brow Top  
Lees Lane  
Wilmslow  
Cheshire SK9 2LR

Patents ADP number (if you know it)

01210608002

6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and (if you know it) the or each application number

Country

Priority application number  
(if you know it)

Date of filing  
(day / month / year)

7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application

Number of earlier application

Date of filing  
(day / month / year)

8. Is a statement of inventorship and of right to grant of a patent required in support of this request? (Answer 'Yes' if

Yes

- a) any applicant named in part 3 is not an inventor, or
  - b) there is an inventor who is not named as an applicant, or
  - c) any named applicant is a corporate body.
- See note (d))

**Patents Form 1/77**

9. Enter the number of sheets for any of the following items you are filing with this form. Do not count copies of the same document

Continuation sheets of this form

Description 4

Claim(s) 2

Abstract

Drawing(s)



10. If you are also filing any of the following, state how many against each item.

Priority documents

Translations of priority documents

Statement of inventorship and right to grant of a patent (Patents Form 7/77)

Request for preliminary examination and search (Patents Form 9/77)

Request for substantive examination (Patents Form 10/77)

Any other documents  
(please specify)

11.

I/We request the grant of a patent on the basis of this application.

Signature



Date 20 Nov 2002

12. Name and daytime telephone number of person to contact in the United Kingdom

David L McNeight 01625 535512

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- Write your answers in capital letters using black ink or you may type them.
- If there is not enough space for all the relevant details on any part of this form, please continue on a separate sheet of paper and write "see continuation sheet" in the relevant part(s). Any continuation sheet should be attached to this form.
- If you have answered 'Yes' Patents Form 7/77 will need to be filed.
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## Solvent

This invention relates to solvents, particularly, though not exclusively, for use as paint  
5 and paintbrush cleaners, and for cleaning off inks and markers.

Conventional products, such as turpentine substitute and some grades of white spirit, are  
found to be carcinogenic and/or harmful in other ways, and a safe alternative is required.  
The present invention provides such an alternative.

10

The invention comprises a solvent comprising a solution in water of a non-caustic alkali,  
a blend of ionic and non-ionic surfactants and a blend of water compatible organic  
solvents.

15 In one formulation according to the invention, the solvent comprises a solution in water  
of:

- an alkanolamide
- a sodium salt of an organic chelate
- a non-ionic surfactant
- 20 • an amphoteric surfactant
- a terpenol solvent, and
- a glycol ether solvent.

The alkanolamide may be triethanolamide.

25

The sodium salt may be that of trinitriloacetic acid.

The non-ionic surfactant may be fatty alcohol ethoxylate.



The amphoteric surfactant may be Laurylbetaine.

The terpenol solvent may be D-Limonene.

The glycol ether solvent may be 1-methoxy-2 propanol.

5

A colorant may be added.

The invention also comprises a method of making a solvent, comprising forming a solution in water of a non-caustic alkali, a blend of ionic and non-ionic surfactants and  
10 a blend of water compatible organic solvents.

The solution may be formed at ambient temperature. The product may be stirred to achieve dispersion.

15 In one method for making a solvent according to the invention, the non-caustic alkali, the surfactants and the organic solvents are added to water in that order.

One example of a solvent and a method for making it according to the invention will now be described.

20

Formulation:

Water	77.53 (84.29)
Triethanolamide	2.38
25 Trinitriloacetic acid - Sodium salt (40%)	5.71 (2.28)
Fatty alcohol ethoxylate (6 mole ethoxylate)	4.76
Laurylbetaine (30%)	4.76 (1.43)
D-Limonene (citrus terpene)	2.36
1-methoxy-2-propanol	2.36

---

Yellow dye

0.10

Figures are % by volume. The sodium salt and the Laurylbetaine are supplied as solutions in water, the active content indicated in brackets. The bracketed water content takes account of this.

5

This formulation is balanced with citric acid to a pH in the range 9.0 to 9.5.

10 The product is cold blended at ambient temperature in a stainless steel tank, dispersion being achieved by stirring with a motor driven mixer blade. The materials are added in the order given in the Formulation - this avoids excess froth at an early stage of the process and ensures solubility of the terpenol solvent. After all ingredients are added, the product is mixed for 20 minutes.

15 It is possible to concentrate the formulation to achieve an active content in the region of 20%, but lesser concentrations are preferred to avoid stability problems in hot or cold storage. It is anticipated that the product will be diluted in use. It will be effective at a dilution of one part to twenty parts water, but for some paints, one part to ten parts water would be recommended.

20 Various substitutions can be made for the components given in the Formulation. Thus, the sodium salt may be that of ethylene diamide tetraacetic acid. Any of a wide range of non-ionic solvents could be used, for example nonylphenol ethoxylate (8 mole ethoxylated). Sodium xylene sulphonate could be used as the non-ionic surfactant. Other terpinol solvents could be used, such as pine turpinol and synthetic turpene  
25 DAB 45. Any of a wide range of glycol ether solvents could be used, including 2-butoxy ethanol (butyl glycol) and dipropylene glycol mono methyl ether (Solvent DPM).

The solvent is effective for the removal and of a wide range of solvent and water based paints, printing inks and markers and cleaning brushes, rollers and other equipment.

Within the scope of the invention, solvents can be designed that will be particularly effective against certain types of paint, ink and marker products, but these may be less effective against others.

---

Claims:

1           A solvent comprising a solution in water of a non-caustic alkali, a blend of ionic and non-ionic surfactants and a blend of water compatible organic solvents.

5

2           A solvent comprising a solution in water of:

- an alkanolamide
- a sodium salt of an organic chelate
- a non-ionic surfactant
- 10 • an amphoteric surfactant
- a terpenol solvent, and
- a glycol ether solvent.

10

3           A solvent according to claim 2, in which the alkanolamide is  
15 triethanolamide.

4           A solvent according to claim 2 or claim 3, in which the sodium salt is that of trinitriloacetic acid.

20 5           A solvent according to any one of claims 2 to 4, in which the non-ionic surfactant is fatty acid ethoxylate.

6           A solvent according to any one of claims 2 to 5, in which the amphoteric surfactant is Laurylbetaine.

25

7           A solvent according to any one of claims 2 to 6, in which the terpenol; solvent is D-Limonene.



8           A solvent according to any one of claims 2 to 7, in which the glycol-ether solvent is 1-methoxy-2-propanol.

9           A solvent according to any one of claims 1 to 8, containing a colorant.

5

10           A method for making a solvent, comprising forming a solution in water of a non-caustic alkali, a blend of ionic and non-ionic surfactants and a blend of water compatible organic solvents.

10 11           A method according to claim 10, in which the solution is formed at ambient temperature.

12           A method according to claim 10 or claim 11, in which the product is stirred to achieve dispersion.

15

13           A method according to any one of claims 10 to 12, in which the non-caustic alkali, the surfactants and the organic solvents are added to water in that order.

14           A solvent made by a method according to any one of claims 10 to 13.

20

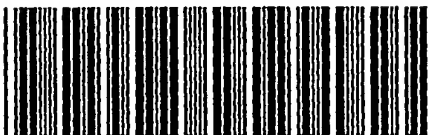
15           A solvent substantially as hereinbefore set forth with reference to the Formulation and the permitted substitutions.

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PCT Application

**GB0304860**



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